

THE RACE QUESTION IN MODERN SCIENCE

RACE MIXTURE

by

HARRY L. SHAPIRO

419



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INTRODUCTION

Nowhere in the world today have differences in race been completely effective as barriers to the production of hybrid offspring. Since there is no reason to believe that this situation was any different in earlier stages of human history, we may conclude, even in the absence of other evidence, that the intermixture of populations and races must be a very ancient phenomenon, occurring wherever the opportunity for it arose. This conclusion, however, is borne out by more than a syllogism. Historic and archaeological data support it. And the present distributions of racial variations and intergrades can be explained most reasonably only by a widespread and very old process of hybridization.

Leaving aside for the moment the thorny question of what a race is, one might go so far as to generalize and say that race mixture must be coeval with race differentiation. Certainly these two processes of fusion and differentiation have gone along together in human history as they have in other forms of life and evolution.

Although race mixture may, therefore, be as old as mankind itself, this does not mean that antiquity clothes it with the dignity of a natural and widespread process or confers upon it an easy acceptance. Indeed, the fact that this is not the case is one of the reasons for this essay and it will therefore be one of my purposes to discuss why this is so nowadays while, in the past, the situation seems, as far as we can

reconstruct it, to have been quite different. Before, however, proceeding further, I think it would clarify things if I define more exactly the biological limits of my subject.

Race mixture, as a phrase, is employed very loosely in common language. It may refer to an intermarriage between Negro and white, to the mingling of various closely related European stocks as, for example, in the United States, and even to an international marriage between, say, an Englishman and a Frenchwoman. Yet these kinds of mixture are racially quite different and socially have distinctive consequences. The reason for this latitude of usage is that the word race is applied with an equal looseness to all kinds of population groups whose mingling consequently has been indiscriminately described as race mixture. Race, at least in English, antedates any attempt to give it scientific speciality. Webster's definition illustrates how widely it is used and how various are the nuances it may suggest:

The descendants of a common ancestor; a family, tribe, people, or nation, believed or presumed to belong to the same stock; a lineage; a breed; also more broadly, a class or kind of individuals with common characteristics, interests, appearance, habits, or the like, as if derived from a common ancestor; as the *race* of doctors, the *race* of birds. 'The whole race of mankind'—Shakespeare. 'Whence the long race of Alban fathers came'—Dryden.

In a literary way, race, therefore, may be applied to any group with a common characteristic, genetic or not, physical or otherwise, innate or acquired. It is, of course, as in so many other words, the context which defines significance. Since it fills a literary need and has established itself firmly in the language, it has proven difficult if not impossible to alter its meaning or at least to restrict it within a scientific definition. Consequently, the simultaneous use of the word in literary and in scientific writing, each with its own meaning, has served to create misunderstanding, as one class of users reads into the word overtones not intended by the other.

This confusion is enhanced further by the subtle changes the word race undergoes from one language to another, and by the emphasis it has received in recent decades, when it was employed pseudo-scientifically for political and nationalistic purposes.

I have touched on these semantic problems not to preface a discussion of the scientific concept of race but to indicate why some definition of the subject I propose to discuss is neces-

sary. It has long been evident that physical differences between groups of mankind vary from those that are barely perceptible and can be expressed only in statistical terms to those that are easily recognized and about which there is a common agreement. Thus, although the English, the Germans, the Swedes, the French and other European national groups may sometimes insist on distinguishing themselves from one another as races, they do in fact share many physical characteristics; they overlap very considerably in their ranges of variation; and in the proportions or frequencies of their known genes they resemble one another closely. Such physical differences as they do exhibit are, compared to the full range of human variation, relatively minor and are frequently exaggerated by differences in custom, dress, language, and other non-racial attributes. From a biological point of view, random intermarriage between such closely related populations may involve, in a very large proportion of cases, no greater diversity than may occur in marriages within national limits. And the offspring of such international unions are usually indistinguishable from the natives of the parental country in which they are bred and raised. The difficulties, and they are often real, that may arise from such crossings of national borders are likely to grow out of cultural differences rather than biological ones. But on the whole, these, when they do occur, are personal problems of adjustment, and even where large social groups display a distinct and even hostile attitude toward such intermarriages, they do not lead to the creation of a permanent minority group or a distinct and physically recognizable entity within the society of which they are a part. From the point of view which I propose to take here, this is an important distinction. It is also in the nature of things that contiguous groups are not only genetically closely related but that intermixture between them has been going on for a very long time; in fact, the former often being the consequence of the latter. The history of Europe for 2,500 years and for a much longer prehistory is full of explicit evidence of much population movement, of settlement and resettlement, of invasion and conquest. All this has meant a constant reshuffling and mingling of genetic elements and thus the weaving of a biological interrelationship far too complex for complete unravelling by any known method of analysis.

This pattern of interrelationship and intermingling characterizes all areas of the world, so that any classifier of mankind is likely to have a very difficult time indeed drawing arbitrary

racial lines between neighbouring peoples. The situation, however, is vastly different when geographically remote or physically isolated groups are compared with each other. Then it is easy to discern notable and distinctive physical variations of a racial order. Thus, it is possible to see in the continuities of mankind a pattern of racial differentiation distributed geographically. Without digressing into the dynamics of genetic differentiation and the effects of mutation, selection, drift and other possible mechanisms on this process, it is generally recognized that isolation is the way these differences are preserved once they are established, and the longer and more complete this isolation, the greater are the differences likely to become.

In this day of world-wide communication and complete geographical exploration, it is often difficult to realize how recent these phenomena really are and, on the contrary, how isolated from each other geographically remote groups were throughout most of man's past. Even at the height of Roman expansion, only a small fraction of the world and its inhabitants were known. Other expanding empires in the past, like China, India or Arabia, were similarly familiar with only a small part of the world and had extensive physical contact with even more limited areas. Although intermarriage, migrations, conquests, the rise and fall of empires, trade and other distributive forces were constantly breaking down population assemblages, shuffling people and spreading genes, these movements were limited and never world-wide. Thus racial differences, blurred and obscured *within* large areas, were preserved between remote groups. And if it is frequently difficult, if not impossible, to distinguish between the members of populations inhabiting the same general area, we find that the inhabitants of widely separated regions offer no such difficulty. No one, on physical grounds, would confuse a Central African Negro with a Mongoloid from China, or either of them with a Scandinavian. These distinctions and others of the same order require no special skill to discern or scientific procedures to demonstrate. They are the product of mankind's history and for the first time became known in their full range only recently.

Five hundred years ago, at the dawn of the age of expansion, Europeans knew of African Negroes principally from classical references to them, from mercantile contact with the Near East where some were to be seen, and from their knowledge of the people of North Africa. Few had ever laid eyes

on any of them until after the end of the fifteenth century. As far as the inhabitants of central and southern Africa were concerned, their acquaintance with the white man was equally vague. In addition, Europeans had some information derived from Marco Polo and other rare travellers of some of the peoples of the Middle and Far East and the islands of Indonesia. They knew nothing of the American Indians inhabiting two continents. They had never heard of the Australian aborigines. Not till much later did they discover the existence of the Bushmen of South Africa, the Polynesians, the Melanesians, the Eskimo, the Paleo-Asiatic tribes of north-east Asia, and many other groups that had pursued their development through countless centuries without any contact whatsoever with Europeans. Although some of these people knew of each other, most of them in turn had equally little or no contact or knowledge of one another's existence.

But, with the explorations of the past 500 years, all this came to an end. The long period of relative isolation ceased. Not only were European contacts with these varied populations established with varying degrees of intimacy, but new relationships of far greater complexity were made possible between those groups themselves, as world trade, labour demands, commercial exploitation and population pressures began to exert their multifarious influences in a world freshly opened to the increasing efficiency of transportation systems.

In this fashion, and through many more routes than I have indicated, a new era of racial intermingling began, similar and yet different from the process of mixture that has always characterized human history. The genetic process of population mixture such as occurs between different Negro stocks, between the Chinese and the people on their borders, between various European nationalities, leads to an interchange of genes or hereditary factors and brings about a diffusion of traits and a mingling of inherited characteristics. Since the differences between the parental group in these, and numerous similar instances, are usually relatively slight, the offspring of the process differ from either parental group to an even slighter degree and the process of assimilation, except when complicated by cultural factors, is an easy one. Intermixture between fully developed and distinctive racial groups is genetically speaking the same process, but it begins with parental groups that are markedly different, both in physical appearance and in genetic make-up, and consequently the offspring, even if intermediate between the parental groups,

remains physically distinct. Where they resemble one parent group more than the other, then the initial physical difference is virtually maintained. In the past, most population mixtures, with a few exceptions, were of the first kind. Since 1500 an increasing amount have been of the second variety. It is this second type of race mixture with which I am concerned here.

In the subsequent pages, therefore, race mixture, unless otherwise defined, will refer to those mixtures occurring for the most part since *circa* A.D. 1500 between the more fully developed racial groups. This is not meant to imply that race mixture in a strict sense can be confined to these only. Students of race are well aware of a number of populations whose origins arise from mixtures between major racial groups that took place well before 1500. But, for the most part, these old mixed groups have achieved quite a different position from the more recent hybrid groups. Their racial origins have lost cultural or social meaning or they have become completely integrated within the population of which they form a part. Moreover, the very antiquity of such established hybrid populations renders their origins and their development more inaccessible to analysis. Although I recognize the danger of setting up an arbitrary distinction in a *continuum* of human hybridization, recent or ancient, I have selected this particular segment because it is the kind of mixture which is so singularly characteristic of our own time; because it illustrates most explicitly the nature of the process of hybridization; because the process has created a vast population, new in the world; and because it has created a series of profound problems demanding our best understanding.

NUMBERS AND DISTRIBUTION

One of the keys to understanding the present distribution of hybridization is a knowledge of the population movements of modern times. For after all it is the contact between people previously isolated from each other that has resulted in present-day race mixture. And what makes this so striking a feature of the recent biological history of mankind is the unprecedented movements of population in the past 500 years. Although migration is nothing new in man's history, never before

have human groups moved in such numbers, over such vast distances, in so brief a time.

The Mongol streams of the thirteenth century, although comparable in the distance traversed, were confined to a relatively small number of conquerors. Similarly, the historically significant *Völkerwanderung* of the Early Christian era shrinks to the level of a local upheaval when set against the vast eruption of peoples that has occurred throughout the world from 1492 to the present day.

Not only were the post-Columbian readjustments of population on a scale hitherto unknown, but the character of the movement and its origins were much more complex and varied than those of previous migrations. It is impossible, in a limited space, to do justice to the history of this migration, but some idea of its magnitude and ramification emerges when we recall that the period began in the Renaissance and reached its apogee in the modern industrial age. During much of this time, revolutions in political, religious, social and economic affairs in Europe and elsewhere were creating stresses and providing motivations for wholesale migrations. Moreover, the complexity of the phenomenon was greatly increased by the untold number of African natives added to this stream of humanity and by the numerous Chinese, Hindus, Japanese, and other Asiatics also drawn into these currents of population adjustment that followed the increasing integration of the world.

So varied a movement cannot be broken up into mutually exclusive categories or phases, but it is possible to discern in this vast population adjustment two contrasting, although frequently overlapping, forces. The first, and older, was the conquering and exploiting aspect of European expansion. It involved, at most, relatively few men and it began from south-western Europe. The second factor was largely a colonizing and settling activity which began later and finally affected an enormous number of people from all parts of the world, but especially Europe. The first of these aspects created the great empires and extended the political and economic control of Europe. It engulfed practically all Africa, it managed to exert control over a large part of Asia and for a time, at least, held sovereignty over all the Americas. The colonizing impulse was more restricted, finding its major resolution in the New World and in the sparsely inhabited areas of the Old World that were suitable for settlement.

Although 1492 conventionally recalls the discovery of the

New World, it also represents an era rich in the discovery of hitherto unknown parts of the Old World. Contemporary with the exploration of American shores, European navigators were rounding Africa, sailing into the Indian Ocean, opening up trade with the East Indies and China, and traversing the wide reaches of the Pacific.

If the New World captured the imperial energy of western Europe first, it was not to remain the only theatre of that activity. The same nations spread their hegemony over the newly discovered regions of the Old World as well. Spain gained control of the Philippines; Portugal acquired scattered footholds in China, India, and the islands to the south; the Dutch won the East Indies; while England and France fought for India. But colonization in these already densely settled and flourishing areas never amounted to much. The European expansion here was simply one of exploitation, and has remained political and economic to the present day. Africa, which was partitioned later, fell largely to the same powers—with the addition of Italy, Germany, and Belgium as imperial factors consistent with their increased importance in this later epoch. As in the case of southern and eastern Asia, the European control of Africa was merely for economic and political advantages except in South Africa, which proved to be suitable for European settlements on a large scale. The islands of the Pacific and Australasia also came under the same imperial influences, with Australia, New Zealand, and Hawaii alone becoming significant areas of colonization and settlement.

Only in the northern tier of Asia were the imperial powers of western Europe shut out. The vast expanse from the Urals to the Pacific, inaccessible from the south and blocked by China on the east, remained an easy conquest for Russia, which possessed a natural entry into the region. The sparse and loosely organized settlements of Siberia not only yielded readily to Russian control but also provided little opposition to a vast Russian colonization that has recently been taking place hardly known to the outside world.

Thus, although the European *imperium* has spread over the major portion of the world during the 450 years since Columbus, the actual movement of European populations within this period has been limited to only a fraction of the area at any one time within the control of European powers.

The first colonizers to leave Europe came from Spain, often as adventurers who remained to settle in the New World as land-owning overlords. Having established their primary base

in the West Indies, they soon invaded the mainland, until their hegemony stretched from California and the southern United States to the tip of South America. All this vast region, except for Portuguese Brazil, was Spanish. It has been estimated by Rosseeuw St. Hilaire that about 3 million Spaniards all told emigrated to Latin America during the first 150 years after the discovery. Kuczynski, a leading authority on population, feels however that this is an excessive figure, since not enough shipping was known to have been available during this period to transport such a number.

The settlement of the northern parts of the New World began slowly in the latter part of the sixteenth century, gathering momentum in the following century as the Atlantic coast settlements came into being. The colonists were largely English, with some representation from various other north-west European countries. It is doubtful if the volume of colonists who settled in North America had, by the time of the Revolution, overtaken the Spanish migration in numbers.

During the sixteenth and seventeenth centuries, the tide of European migration set firmly toward the New World. In the eighteenth century the flow continued to move in the same direction but with minor diversions toward South Africa and Australia. In the nineteenth century the tide became a flood. Not only was the number of migrants increasing amazingly, but new sources of supply were opening up all over Europe. For the first three centuries Spain, Portugal, the British Isles, Holland and France were the principal suppliers of colonists. In the nineteenth century Germany, Ireland, and later Italy, Austria-Hungary, Poland, and Russia, not to mention the smaller countries of Europe, poured forth thousands upon thousands of their natives to join the greatest *hegira* in the history of man.

Most of this movement followed the lines already established. From 1820 to 1935 Kuczynski estimates that 55 million entered the Western Hemisphere from Europe alone. By far the greater portion of this number settled in the United States. Many, of course, returned after a temporary residence, but the net number of permanent settlers in this period was probably well over 35 million. During the same century about 4 million migrated to Australia and over a million to South Africa.

On a smaller scale than this movement to the New World has been the Russian expansion into the vast Asiatic hinterland. Millions of peasants have been moved to the forests,

mines, and fertile plains of Asiatic Russia in tempo immeasurably increased since the Russian Revolution.

This spilling over the bounds of Europe did not, however, continue without its profound effect upon movements of people on other continents. It set up movements of native population within the areas of immigration and in some cases resulted in the extermination of the aborigines. But, in addition to these local consequences, the expansion of Europe also drew into itself a series of subsidiary non-European migrations. One of the most significant of these was the resettlement in the New World of approximately 15 million Negroes from Africa. The Spaniards, almost immediately after establishing their settlements, began to ship Negroes to their plantations as slaves, to replace the unsatisfactory Indians. After 1600 the Dutch and the French also engaged in this traffic, and by 1650 the English were also actively involved. The shipments continued as late as 1830 to Cuba and 1860 to Brazil. The total numbers thus transported can only be estimated. Between 1655 and 1787, 676,276 were known to have been legally imported into Jamaica, and, in the year 1771 alone, 47,146 Negroes were carried in British vessels. From these figures it is obvious that the movement was on a large scale. DuBois has calculated the following numbers of Negroes imported into the New World: 900,000 in the sixteenth century, 2,750,000 in the seventeenth century, 7,000,000 in the eighteenth century and 4,000,000 in the nineteenth century. Total, 14,650,000.

This total represents those who actually arrived in America. If the enormous loss of life that took place aboard slavers were added, the total number of Negroes leaving Africa would be much greater.

Historically, the Caribbean area was the centre of the slave traffic, and it is here that the Negroes in the New World have most completely replaced other elements. As one moves north or south from the tropical belt the proportion of Negroes decreases. Similarly the concentration of Negroes relative to the population declines from east to west. This is very evident, not only in the United States, but especially in South America. It is tempting to attribute this form of distribution in part to ecological factors of climate and environment which might have conditioned the manner of Negro dispersal in the New World, but historic factors must also have been effective.

In this connexion it is worthy of comment that the distribution of Europeans in Central and South America also reveals a distinct pattern. The relative frequency of population

of such origins is least along the Andean and Cordilleran system, precisely where the native populations were heavily concentrated in highly organized civilizations. It would repay investigation to determine whether or not the well-organized masses of aborigines were able, in these regions, to hold their own more effectively against European encroachment than in other regions occupied by loosely associated hunting tribes. Moreover, the survival of native population in these regions offers another explanation for the relative absence of Negro settlement.

In the Old World, too, migrations of non-European populations have been stimulated by European expansion. Although the Chinese, Arabs, and Hindus had been expanding long before the advent of the white man in their worlds, the rate and extent of their migrations were enormously increased during the nineteenth and twentieth centuries as a result of conditions made possible by European hegemony. The Chinese, for example, increased their flow of emigrants to the East Indies, the Philippines, South-East Asia, Hawaii, the United States and various other parts of the world. The Hindus were moved to Africa, Fiji, and South-East Asia as labour requirements demanded. More recently the Japanese, who previously had been closely confined to their own islands, began a movement of emigration in various directions. These migrations of Asiatic people, although on a smaller scale and with a different history from the European expansion, nevertheless form part of the same picture of a world in population readjustment.

From this complex reshuffling of population has issued a varied array of hybrids, their number and nature depending on a variety of factors. No one knows, however, precisely how many racially mixed people exist today. One reason for this is the sheer difficulty, if not impossibility, of counting them. In many areas where they are most numerous, accurate enumeration is out of the question because neither the enumerators nor the enumerated can always supply sufficiently accurate information on racial status. And in other instances, even if a census were possible, it is regarded as undesirable or impolitic to make one. Since some of the difficulties encountered illustrate certain characteristic phases of the hybridization process, it may be profitable to consider a few of them.

It may at first glance seem paradoxical that anyone of mixed racial origin be unaware of it, but let us see how it actually comes to be so. Negroes, for example, were first

introduced into the present limits of the United States as slaves, now well over 300 years ago and even earlier into the Spanish and Portuguese colonies of Central and South America. The evidence is abundant enough, as Gilberto Freyre has shown for Brazil, to demonstrate that almost immediately and everywhere sexual relations between the white masters and their slave women were established and frequently regularized as a system of concubinage. The half-caste children produced by such miscegenation formed a distinctive class designated by such terms as Mulatto, or they might revert to their maternal status or be elevated by their fathers to a higher one. In time, those who had become identified culturally and socially with either parental group would tend to become assimilated to one or the other racial strain. Thus after the passage of centuries, some mixtures dating back many generations might be forgotten, particularly where genealogies were not preserved, or even suppressed where damaging to social pretensions. It is, of course, a fine question how much should be made genetically of a Negro strain that no longer is recognizable in a man who can pass as white or of a white strain in one who appears to be pure Negro. But in the United States, where any recognizable appearance of Negro ancestry serves to label a man as Negro, many people of considerable white admixture are classed as Negro and in the frequent absence of family records of mixture would regard themselves as such. In fact, for census purposes, all individuals of pure or mixed Negro ancestry are listed as Negro. Attempts to determine the number of mixed Negro-whites in the United States, therefore, can only be estimates; and these vary enormously.

It must also be remembered that the so-called phenotype or physical appearance of an individual is not always a safe guide in determining racial mixture, since many individuals of mixed ancestry may actually not give evidence of it in their general physical aspect. And where such individuals have been brought up in ignorance of their genealogical or family history and in close cultural or social relationship with the racial strain they resemble, they may not be aware of their mixed heredity.

How important the cultural factor can be in determining racial status is illustrated by the situation common among Mestizos. In many Latin American countries where Indian and white mixtures are well established, the generally accepted criterion of racial status is largely cultural. Thus

Mestizos who have adopted Spanish customs, speak Spanish and wear European dress are often considered Spanish even though anthropologically they may reveal mixed origins. Conversely, mixed bloods who speak native languages and wear native clothing are classed as Indian. Consequently the official size of the Mestizo population is likely to be smaller than the actual one. Such losses vary, of course, in different countries according to local cultural attitudes, and this emphasizes the necessity of considering the mutual interrelationship of culture and biology when considering race mixture as a whole.

If the exact number of racial hybrids is unknown, there is, however, no doubt that the overwhelming number of them are to be found in the New World. If we consider first the Indian-white crosses, something like 16 million have been estimated as living in South America. This is twice as many as those listed as pure Indian and is almost 20 per cent of the total population of all South America. These round figures do not, of course, suggest the pattern of their distribution, which is far from uniform. In certain countries, like Argentina, they constitute only 2 per cent of the population. They represent a similarly negligible number in Uruguay and Brazil, although in the latter country it is probable that much of the early crossing with Indian populations has been absorbed into other racial crosses and is no longer identifiable. On the other hand, Paraguay is virtually a Mestizo country with an estimated 97 per cent of the people of this category. Venezuela is also predominantly Mestizo, with 70 to 90 per cent so classified. Such countries as Peru, Bolivia and Ecuador fall between these two extremes.

In Mexico and Central America, the number of Mestizos listed in the census counts is also high. Something in the order of 12 to 13 million Mestizos are to be found here, exceeding even the Indian contingent. In many areas of this region the Mestizos form more than 50 per cent of the population.

Mestizos in the United States and Canada are relatively few. According to the 1930 census there were about 141,101 who were recognized as Indian-white crosses in the United States, while in Canada for the same year they were about 65,000 in number.

Thus for the New World we obtain the astonishing figure of 28 to 29 million Indian-white crosses.¹ This for reasons

1. Rosenblatt estimates the number of Mestizos as 30,933,000 and Indians as 15,619,358.

mentioned above is a minimal estimate and even at that is probably twice the number of pure Indians. On the whole, the Mestizos are to be found in greatest numbers where the aboriginal population of Indians was most concentrated in settled agricultural communities and least where they were thinly distributed in nomadic, hunting societies.

The Negro-white crosses, or Mulattoes, represent the other large group of mixtures in the New World. Their number is particularly difficult to estimate because perhaps even more than among Mestizos, the line between mixed and pure Negro is hard to establish. Thus, in the United States, social attitudes and genealogical obscurities tend to place many in the category of Negro, and in Brazil, where another large section is to be found, racial distinctions are officially avoided. Rosenblatt, however, gives the following figures for the Western Hemisphere: 8,113,180 Mulattoes and 23,201,000 Negroes. Other crosses such as Negro-Indian, white-Negro-Indian, and varying kinds of mixtures that include Chinese and East Indians are also to be found, but their number is relatively small.

Summarizing the total situation, Rosenblatt gives the following figures: white, 152,000,000; Negroes, 23,201,696; Indians, 15,619,358; Mestizos, 30,933,335; Mulattoes, 8,113,180. Total, 247,245,099. From this array, it appears that the mixed populations comprise one-sixth of the total population of the Western Hemisphere. That hybridization (as defined for the present discussion) represents in the New World a far greater phenomenon in absolute numbers and in relative proportions than anywhere else, may be seen by contrasting the situation here with other parts of the world where hybridization has been proceeding in recent centuries. The most significant of these areas are South Africa, Malaya, Indonesia, Oceania (particularly Hawaii) and India. In South Africa there are close to 1 million coloured people who represent the offspring of Negro-white crosses with some additional elements, and, although they form a considerable part of the population, they number less than half the total of the Whites and a small fraction of the total Negro. In South-East Asia the principal mixtures are between Chinese, mainly migrants from southern China, and the native populations. Their total number is difficult to assess. An indirect estimate by Lasker suggests hardly more than 4 million. Everywhere they are a minority and often a small one, although their heavy concentration in urban centres and their control of mercantile and financial activities often give them a pro-

minence out of proportion to their actual number. Fewer in number are the crosses between Europeans and native populations, generally referred to as Eurasians. Their total in 1940 was in the vicinity of 200,000, most of them originating from Dutch-Indonesian mixtures. In India the number of Eurasians, the principal group of mixtures, is small; 140,000 according to the Thorners. Finally, in Oceania, race mixture—including white-Polynesian and Chinese-Polynesian crosses—is very widespread, and in some islands a predominant part of the population; their total numbers, however, hardly exceed 100,000.

Although these figures are admittedly very approximate, their total—something less than 6 million—falls so far short of the estimates for the mixed populations of the New World that we can have little hesitation in recognizing that the latter is the main centre of race mixture in modern times.

One of the questions that arises from this survey of the extent, numerical and geographic, of race mixture, is why the Western Hemisphere should be the area of its greatest concentration. The answer lies, it seems to me, in the fact brought out earlier that most of the colonization that characterized recent European expansion was directed toward the New World. Compared with the vast flood that flowed to America, the movement to Asia, Africa and other parts of the Old World was a mere trickle. Perhaps the relative propinquity of the eastern coast of America to the Atlantic countries of Europe, perhaps the more favourable climate and possibly the early engagement by America of European energy and activity may all have played a part. But certainly among the principal factors must have been the easy and rapid conquest of the native populations combined with the fact that, over much of the areas first encountered by Europeans, the thinness of the settlements gave an impression of a vast region practically empty and open to European settlement. Asia, on the other hand, was a continent occupied by large and populous kingdoms and empires that could at first easily repulse the feeble bands of Europeans. The first landfalls of the Portuguese, Spaniards, Dutch, French and English in the Far East were precarious and hardly conducive to extensive settlement. Moreover, the teeming populations left little if any room for large-scale migrations from Europe. There were areas attractive for trade, for empire building; but not for colonization. Africa, on the other hand, was unattractive to European settlers on the score of climate. In South Africa, where the

environment was more congenial, the first European settlements were established. Australia and New Zealand, although seats of active colonization, never rivalled America in the numbers they attracted, the former because of the limited area suitable for European settlements, and the latter because it is a small country.

Thus the overwhelming migration from Europe, carrying in its wake a massive population from Africa, both meeting the native American Indians, brought together three distinct racial strains and set the stage for the extensive intermixtures already described.

This survey of the number and distribution of racially-mixed populations leaves little room to question the world-wide nature of the racial hybridization set into being in modern times. On this score alone, its universality would call for serious study. But in addition we have seen that the numbers involved are far greater than is ordinarily conceived. Even these estimates are unquestionably far over on the side of under-estimation. As a minimum, 2.5 per cent of the world's population falls into this category, and, if the information were more adequate, the percentage might prove to be considerably higher.

RACE MIXTURE—A MODERN PROBLEM

If race mixture enjoyed complete acceptance in the modern world, its offsprings would ultimately be absorbed by the society into which they were born and consequently no problem would exist. The various countries where races had mingled would have achieved, or would actively be in the process of doing so, populations thoroughly mixed as to race and varying from each other according to the components of their respective mixtures. In such societies, segregation or stratification on a strictly racial basis would not occur. The fact is, however, that mixed bloods do frequently occupy a distinctive position, form a special class in the social structure and have continued over a long period of time to represent an unabsorbed and sometimes an increasing element in the populations where they exist. To the extent that this situation has developed, it is a measure of the lack of acceptance of the process of miscegenation and an index of the degree of the rejection that mixed bloods suffer.

Now the phenomenon is too manifold and diverse in its origins and expressions to be summarized readily in a simple paradigm. And it would, moreover, be a mistake to suppose that race mixture in our day always leads to a rigid social stratification. There are instances where it has not. It has not in Paraguay, where hybridization between Indians and Spaniards has embraced virtually the entire population. It has not in such countries as Mexico, where some Indian blood is no hindrance to an individual's mobility in the social structure. It often did not, in the earlier phases of miscegenation, even in areas where the mixed bloods later became insulated in the social body. For example, the early Dutch in Indonesia looked upon mixture with the native population with a benevolent eye. Official policy even encouraged it as a way of consolidating the position of the Dutch in the islands and of providing a class of native-born subjects loyal to the interests of the Netherlands and attached to it by bonds of blood relationship. A similar attitude characterized the British in India, where miscegenation was also at first tacitly fostered. Despite these and other exceptions, the fact remains, however, that to a large extent miscegenation has produced caste-like groups in the societies where it has occurred.

It is a legitimate inquiry, under the circumstances, to ask why this is so. Especially is it pertinent when it is recalled that miscegenation in the more remote past did not generally lead to the creation of such permanent social classes based on race such as we frequently see today. In part, of course, that former readiness to accept miscegenation can be explained on the grounds that the participants were closely related biologically in most cases and that such mixed individuals as resulted were physically indistinguishable from the rest of the population. But this is not the whole answer, because the anthropological evidence is abundant that, in the past, even hybridization between racially distinct groups followed the same pattern. It would be an oversimplification, however, to suggest that race mixture in earlier periods was always an easy process of absorption, or to imply that the intermingling of diverse strains was universally free and unaffected by social restrictions. It has been proposed, although not generally admitted by all competent students, that the caste system of India, for example, owes part of its origin to initial race differences, but even here the racial significance, if there were any originally, has been obscured by other developments. In other regions—Ethiopia may be taken as an example—racial

differences between the ruling class and the general population might perhaps suggest racial segregation. But in such cases the survival of initial racial differences is attributable to an aristocratic class tradition rather than to social segregation based primarily on race.

The racially mixed group as a distinct and more or less permanent entity within a population is, then, generally speaking, a modern phenomenon and lies at the root of the whole problem of race mixture. Its explanation is not simple and much more investigation is necessary before we can speak with finality about the factors responsible for its development. I shall mention below some of those I consider important, but this list is not by any means meant to be exhaustive, nor are all these items applicable to all situations.

RACE CONSCIOUSNESS

It seems to me impossible to consider race mixture without reference to race consciousness. Awareness of racial distinctions is universal. All people recognize the physical differences they see between themselves and members of other races, and when the differences are great they become increasingly aware of them. The first Europeans to be seen by such isolated people as the Polynesians were recognized at once as a different race of men and became the objects of great curiosity. The strange visitors, to their own great embarrassment, were often amusingly subjected to thorough handling. Similarly, literary records of Western as well as Asiatic origin reveal an ancient knowledge of racial differences. But this universal ability to see obvious physical differences in skin colour, hair form and other well defined racial features did not lead in earlier ages to an elaborate orientation of human relations within a rigid racial frame of reference. Such a development is recent. Modern man is race conscious in a way and to a degree certainly not characteristic previously. It would lead to too great a digression to examine all the reasons for this development.

Thus, where racial consciousness is strongly developed, the hybrid's physical deviation from the parental group labels him as, at least partially, of different racial origin. From the point of view of either parent race, his genetic connexion with the other tends either to distinguish him racially from their own or to associate him racially with the other. Indeed,

race attitudes are so axiomatically interwoven with the position of racial hybrids that, in some situations and from certain points of view, no significant distinction is made between the mixed group and the socially inferior parental group. In the United States, for example, although the existence of admixture is fully recognized and is reflected by the usage of such terms as 'mulatto' and the now slightly old-fashioned 'quadroon' and 'octoroon', these mixed Negro-whites are generally classed with Negroes. Similarly the Cape Coloured of South Africa are to some extent linked with Negroes and are subject to the same general, if ameliorated, racial attitudes.

When exclusive racial attitudes are characteristic of both parental groups, the hybrid may be an object of exclusion by both. This is the fate of many Eurasians, both in China and India, where they find themselves not fully accepted by whites or the native populations.

NUMBERS

The number of hybrids within a society undoubtedly plays a part in the role they come to occupy. Where there are few, they tend to become absorbed into either parental group. This process is all the more rapid where one of the parental groups is also negligible in numbers. But even where the number is relatively large, but is thinly distributed, the forces of disintegration continue to operate effectively.

On the other hand, large numbers relative to the total population or occurring in heavy concentration, seem to offer a more favourable environment for the building up of a group identity.

COMPETITION

The effect of economic competition is difficult to assess accurately, although the feeling engendered by it often looms large in the subjective aspects of racial segregation. Like many other influences on the whole situation, its influence is interwoven with other aspects of the problem. Frequently one finds that 'mixed bloods' are excluded from occupations reserved for the dominant race and any pretension to such favoured positions is resented and discouraged. On the other hand, they are sometimes encouraged or permitted to fill jobs

not generally open to the 'native' group. Eurasians in Java and India frequently monopolized the minor clerical positions in government offices. So, too, the Cape Coloured are often favoured in types of employment not generally open to Negroes. In *ante-bellum* days in the southern United States, Mulattoes and other mixed Negroes were frequently trained for jobs demanding manual skills, but were never employed in any administrative or directive capacity regardless of their condition or capacity.

Economic restrictions of this sort give a kind of caste aspect to the hybrid group and eventually become a matter of deep resentment on its part. At the same time, the pressures of the half-castes to rise in the economic scale as their education improves seem to constitute a threat to the dominant group, who react against what seems to them to be aggression that must be confined.

Competition can take even more direct form as, for example, when the mixed-bloods compete directly with the lower economic levels of the dominant group. Such conflicts arising in a racially conditioned class system serve to aggravate the fear and antagonism based on race. Thus it has frequently been observed that the secure upper classes in the Southern States were able to entertain a more tolerant and benign feeling toward Negroes and Mulattoes than the 'poor whites' were able to do in more immediate competition with them.

CULTURE

In some respects cultural differences must be taken into account. In the kinds of race mixture that we are considering here, the parental groups are sharply differentiated in their ways of life, their values and even in the apparently unimportant *minutiae* of daily living. Although these have obviously not prevented the production of mixed offspring, no matter how diverse they may be they are far from negligible as determinants of attitude. They affect the way the parental groups think about each other and the way the eventually distinctive mixed group is looked upon by both.

Usually where a highly civilized group is mixing with a race on a simpler cultural level, the cultural resistance is apt to be on the side of the more complex culture. This is true not only of whites intermingling with simpler native people, but also applies with equal significance to other civilized

people such as the Chinese. Thus Chinese men mixed freely with Hawaiian women before women of their own country were available. As Chinese brides became increasingly accessible, traditional Chinese values and feelings of cultural superiority tended to discourage further out-marriage. The difference between the Chinese way of life and that of the local population is often felt very strongly by many Chinese families in Hawaii and any tendency to marry outside the group, even with part-Chinese, is strongly resisted by them.

When two groups of people with backgrounds of high cultural achievement mingle, the mutual intolerance for each other's values can often render the mixed blood unacceptable to either camp, as has already been pointed out for Eurasians.

IMPERIALISM

The importance of the development of imperialism in framing the characteristic attitudes toward race mixture cannot be neglected. This system is based upon the conquest of native people, either peacefully or by force of arms, and it is maintained by a ruling and governing class of aliens—in our day mostly Europeans. Whatever the economic or political necessity for it may be, the fact remains that it universally results in an inevitable class distinction between the rulers (Europeans) and governed (natives). Since the ruling class is generally a relatively small one compared to the mass of the native population, it can sustain its prerogatives of power and privilege only by inducing the native population to recognize them. This, of course, can be achieved by military coercion or by various other less costly devices. Sometimes, once submission is achieved, the superior or more complex civilization of such a ruling class provides it with enough prestige for this purpose; or the benefits it confers on the conquered may be sufficient to win support. Sometimes the Europeans, by preempting the position of a previous ruling class, may fit readily into an existing traditional pattern. Sometimes it is the ascendancy of a strong, efficient government that enables the conquerors to enjoy their hegemony, or conversely the absence of a determined and organized resistance.

But in virtually all colonial situations where Europeans have imposed themselves as a conquering class on a native people, this very act creates a chasm between the two. As members of a different culture, the rulers as a class rarely,

if ever, understand the natives. They look down on them from a sense of their own superiority, developed in part from a conviction that their own civilization reflects an innately greater ability and in part from the very position of authority they hold. Even when they recognize a picturesque or quaint aspect in native life, it remains something foreign, perhaps even illogical, and never quite right. As rulers, they also are concerned with the security of their position, which must be protected from encroachment. Exclusiveness becomes a feeling of necessity. And symbols of membership in the ruling class take on enhanced significance.

Under these circumstances, any breaking down of the solid front of the ruling class is resisted firmly. The native must be kept in his place. And by extension this applies to the half-caste, too. For if the mixed-bloods were fully accepted, all the laboriously created prestige would be threatened and probably destroyed. Thus purity of blood is highly prized in most colonial situations, although it must be admitted that exceptions occur. But so strong is this feeling that even when there is good reason for believing that some remote ancestor may have had native origins, it is likely to be denied or suppressed.

BIOLOGICAL CONSIDERATIONS

While many people are deeply influenced in their racial attitudes by cultural considerations, they are not likely to assign their feelings directly to them. Thus when the European encounters a bare-footed native wearing bizarre clothing, or watches one eating in an apparently unmannerly fashion, or observes some, to him, superstitious and meaningless ritual, he sees these departures from his own standards of behaviour not simply as cultural differences, but as indications of inferiority. It is a subtle thing which the traveller rarely escapes. Even where the conventions and trappings of a foreign culture are impressive in their complexity, this strangeness often lends them an air of unreality, of *opéra bouffe*, that in the end renders them somewhat childlike if not ridiculous. Although we are accustomed to use the European as the exemplar of such reactions, they are far from being exclusively his. Chinese and other literature of travel is full of similar examples in which cultural differences are equated with inferiority. Even

in the instances, and they are not few, where a native people on a simple level of culture first come into contact with Westerners, they have been known to attribute superiority and even a god-like quality to them because of their superior equipment. Thus the big ships, the cannon and the metal tools of Captain Cook so deeply impressed the Tahitians that they transferred to him and his fellow-Englishmen the superiority they recognized in his material possessions.

But whatever the source of these feelings concerning a racial hierarchy, they are widespread and few people escape their effects altogether. When hardened into a confirmed article of belief, they become a significant factor in shaping attitudes towards race mixture, since, if races can be arranged in a linear order from inferior to superior, then miscegenation of a superior race with an inferior one will lead to the production at best of something less good than the superior race. The varied guises that this conviction assumes are legion, but basically it seems to rest on two general ideas, both fundamentally genetic. One is that biologically the races of man in some manner or other fall into a kind of *échelle des êtres* somewhat like Cuvier's evolutionary concept. According to this, certain races are more primitive than others, closer to the primate ancestors from whom mankind evolved, and others more advanced, more 'evolved' and consequently in the forefront of human evolution. Such differences are assumed, of course, to be innate, and not the passing effects of a particular situation or environment.

The other conviction is that the races of man differ in their psychological attributes, including intellect and personality. In these, too, the races are considered to be susceptible of an hierarchical arrangement. To some extent such an ordering may reflect a belief in the evolutionary sequence implied in the *échelle des êtres* concept, with the most 'evolved' race necessarily endowed with the greatest abilities.

The arrangement of mankind into successive and ascending categories, biologically and psychologically, obviously offers a reason, if not a justification, for a variety of social and economic inequities that are taken to reflect their inevitability. But a closer examination of the evolutionary process in general and of what is actually known about human evolution in particular provides us with little or no support for this conception. For it would imply that human evolution, or rather racial differentiation in man, was a kind of evolutionary relay race with one group of mankind starting off from where the

previous one had stopped and ceased to evolve or differentiate farther. To some extent, perhaps, this view has been encouraged by the relatively 'primitive' characteristics of such races as the Australian aborigines who, in some of their cranial structures, are closer to the simians than other races. But even the Australian aborigines, in other features, are as remote from our primate ancestors as any other group.

The evidence we do have suggests, on the contrary, that races have been differentiating more or less independently and at the same time. This differentiation has apparently proceeded by the accumulation of gene differences probably most, if not all, adaptive to the environment where a particular race developed. Anatomically, this differentiation has advanced sufficiently in a number of instances so that phenotypic distinctions have become well defined with little or no overlap in the diagnostic traits. Intergrades and transitions between the extreme degrees of physical differentiation also occur, but do not invalidate the tendencies here described. Thus we cannot assert that the existing races represent a sequential series of evolutionary stages with each advancing from the level of its predecessor to the next step. And even if it were possible to claim that one race branched off from another, we still cannot assert that the parent race ceased to evolve once the branching occurred. Actually, the genetic mechanisms known to us suggest quite the opposite, as I have already indicated.

If races were, indeed, to be graded according to their supposed possession of anthropoid-like features, it would no doubt surprise some members of reputedly superior races to discover how many of their characteristics might have to be given a low rating on such a morphological scale. For example, the frizzy hair, the thick lips and the hairlessness of the Negro are more 'evolved' from a simian level than the corresponding features of Europeans. This kind of comparison in the long run proves of little significance.

Similarly, the comparison of races for biological fitness have thus far not revealed any striking or valid differences that might suggest ideas of superiority of one over the other. Some evidence does exist that environmental adaptations develop in races, making them perhaps better suited for the conditions under which they live than invading and differently adapted groups. For example, recent research on the dispersion of body heat indicates that Negroes have a more efficient physiological mechanism for this purpose than whites have. This in itself of course would not necessarily mean a biological super-

iority of the Negro except under the conditions where his special adaptation might provide him with an advantage. This same kind of specialization gives the Eskimo a distinct superiority in his own environment over other races, but the advantage disappears and may become a detriment when the Eskimo moves into another area. It is sometimes claimed that those races that live in less extreme types of environments, and are consequently less committed to a high degree of specialized adaptation, can fit into a wider range of environmental niches. But even if this were true, such races would be difficult to place in a biological scale of value, since such judgements end up by being relative and tentative at best.

In the last analysis, however, it is the psychological differences that are considered the most significant by the adherents to a belief in racial hierarchy. For even if a protagonist of this conception be forced to admit the shifting sands of the biological argument, he retreats to the apparently obvious strength of the psychological evidence. And to many people, unfamiliar with the specialized literature on the subject, the natural and innate superiority of their own race over all others seems too self-evident to require scientific demonstration before acceptance. Thus there are two kinds of evidence adduced on this question: the common one employed by the so-called 'man in the street' and the one based on quantitative data collected to support or test its validity.

Let us consider the common argument first. It often runs something like this. Europeans (any other highly civilized group with appropriate modifications would serve as well) have motor-cars, radios, ocean-going liners, large cities with major architectural monuments, efficient public services, centralized and elaborate governments, and a whole host of complicated things and institutions. Negroes or Melanesians or any other native group living in a simple society have none of these things or institutions, or only obviously inferior versions of them. Since it takes ability and skill to make these superior things or to run these complicated institutions, the Europeans are obviously superior. Similarly the music, the art, the literature and science of Europe provide a measure of the greater ability of Europeans.

Moreover, the Westerner when he visits or settles among these simpler people, finds them occupying inferior social and economic positions to his own, and, for the most part, behaving in a fashion or subject to customs which he does not understand and therefore regards as unreasonable or illogical.

These, of course, are cultural arguments, although they are taken to reflect psychological differences. It would, of course, be unwarranted by any critical evidence now available to deny dogmatically any psychological factor in these cultural differences, but it is abundantly clear from the great mass of anthropological investigations that such psychological deductions drawn from purely cultural comparisons can be grossly misleading or even completely erroneous. There are too many temporal and non-genetic elements that play a part in the development of any culture to overlook in evaluating its status. Indeed, it is a rather tired *cliché* to recall the former cultural inferiority of many people who now pride themselves on their superiority.

Of a quite different character is the evidence derived from psychological testing or morphological comparisons of the brain. The latter type of investigation, in part quantitative and in part qualitative, attempted to demonstrate physical differences between races in the mass of brain tissue and in its organization. Although certain statistical differences have been discovered, not all of them conform to preconceived notions of racial ranking. But the major difficulty with this line of thinking is the lack of proof that ability is directly correlated with size of brain or with any of the morphological features thus far studied.

Psychological testing, on the other hand, has seemed to offer a far more reliable method of appraising ability, and a very considerable corpus of quantitative data bearing on this has been accumulated. If these results are taken on their face value, certain racial differences emerge, although not always consistently. Experts, however, are now fairly generally agreed that such tests are rather better indexes of achievement, or may we say phenotypic intelligence, than they are of the innate and genetic abilities. The effect of educational, social, economic and even emotional factors can be considerable, and test scores have been shown to fluctuate with changes in them. For these and other reasons, many psychologists are extremely averse to drawing conclusions on racial differences in ability from the test data, although in all fairness it should be noted that some of them do consider these sufficient evidence of such distinctions.

But in no case am I aware that professional psychologists have made any claim that the psychological differences are of the same order as diagnostic morphological differences in race. In this respect it is clear that the differences in psycho-

logical scores are a matter of statistical mean differences. In other words, according to the test data, races where they differ do so in their averages which reflect variation in the ranges of the scores and the frequencies in the various categories within the ranges. No two races are discontinuous or non-overlapping. Actually, in most instances, the overlap is very considerable and sometimes even the ranges are very close. All that can be claimed is that one race may have a larger percentage of higher scores than another. Moreover, it is worth restating that the higher scores of the supposedly lower race are above the lower scores of the reputedly superior one. In all cases, the observed difference between races is far less than the variation within any one. Thus it would be impossible to assign anyone to a particular race on the basis of his test score, as one might do for many people on the basis of their morphological characters. In view, therefore, of the kind of difference the tests can show and the uncertainty that exists in their proper interpretation, any far-reaching conclusion as to racial differences based on them would at present be unjustified.

I have gone into these problems at some length because current convictions of the kind I have been analysing have most profoundly influenced attitudes towards the mixture of races. But even beyond the belief that where inequality between races exists mixture can lead only to a product inferior to the superior race, there is the dogma that mixture in itself is a process that allows incompatible traits to be combined in the hybrid, thus making the process of miscegenation a dysgenic or unfavourable one. This view may even conceivably be held while admitting each race to be equally adapted to its own milieu and of equal psychological value. The evidence for this hypothesis, however, is not very convincing. I shall deal with some of it in a later section.

DOWN TO CASES

PITCAIRN

Previously I had mentioned the manifold variety of the origins and the diverse expressions of race mixture. I can, I think, best illustrate this by a series of case histories which may also help to clarify some of the issues that surround this subject.

These examples are drawn from various parts of the earth, represent a number of different crosses and have developed under widely contrasting circumstances.

Perhaps the best known of them all is the small group of Polynesian-English mixed bloods that live on Pitcairn Island in the South Pacific. Here, on a tiny volcanic island only about two miles long and about half as wide, were resolved the train of events that the famous mutiny of the *Bounty* set in action. This episode, famous in British naval annals, occurred in the year 1789 shortly after H.M.S. *Bounty* had departed from Tahiti where she had been dispatched under the command of Lieutenant William Bligh to collect breadfruit plants. Reports brought back to Europe by Cook and Bougainville described the breadfruit as a remarkable tree capable of supplying a staple article of food with a minimum of effort. British planters in the West Indies, eager to obtain so easy a source of foodstuff for their slaves, had petitioned for the expedition with which Bligh had been entrusted. Now after six successful months in Tahiti, with the ship's hold full of potted trees, the return trip was interrupted by the mutiny of 25 of the men out of the crew of 44. The mutineers were led by Fletcher Christian, one of Bligh's officers, and a native of the Isle of Man where his family had long been prominent.

The mutineers, seizing the ship, put Bligh and those faithful to him adrift in a small open boat and reset the *Bounty's* course for Tubuai, an island 300 miles south of Tahiti. Here, an abortive attempt was made to establish a settlement, which failed because of the hostility aroused in the natives by the behaviour of the mutineers. Returning after this to Tahiti, the mutineers split into two groups: one, consisting of 16 men, preferred to remain in Tahiti, where a number of them had already established liaisons with native women and had been welcomed into the island homes; the other contained nine men headed by Christian. These men, apparently anticipating a possible punitive expedition once the news of the mutiny reached England, were eager to leave Tahiti, where they could not hope to escape capture, and to find a more remote and perhaps inaccessible island where they might remain undetected. Accordingly they, together with 12 Tahitian women and six Tahitian men, set sail from Tahiti in September 1789, and until 1808 were virtually lost to the world. In the latter year their retreat on Pitcairn, some 2,500 miles south-east of Tahiti, was discovered by Captain Mayhew Folger. During this interval much had happened on the island. All the Tahitian

men and all but one of the Englishmen had died—most of them violently, and after only a short sojourn in their new home. In addition, Folger found eight or nine surviving Tahitian women and 25 children, offspring of six of the Englishmen and their native wives. None of the Tahitian men had left issue, perhaps because they were murdered too soon after the settlement on the island.

From this handful of children—half-Polynesian, half-English—the little colony increased by leaps and bounds, until 50 years later there were almost 200 inhabitants on the island. By this time, fear of overpopulation and the recurrence of water shortages induced them to request of the British Government the use of Norfolk Island, some 4,000 miles to the west, as a new home. This considerably larger island had recently been abandoned as a penal colony and was temporarily unoccupied. In 1856 the entire colony moved there and set up a new establishment, but subsequently several families returned to their beloved Pitcairn. In 1864 there were 45 descendants of the mutineers living on Pitcairn, the remainder having gone on to Norfolk. At present there are on both islands about 1,000 descendants of the original colony, not counting those who have married out of the community or settled in New Zealand, Australia and elsewhere.

As an example of race mixture the Pitcairn Islanders are far from typical. But it is the very singularity of the colony that is full of meaning in interpreting race mixture as we commonly see it. Simply as a cross between Polynesians and English they can be matched in many parts of Polynesia where the same kind of mingling has occurred, often with notable results, as in New Zealand. But unlike all other mixtures of this kind in Oceania, and indeed unlike virtually all race mixture wherever it occurs,¹ the Pitcairn Islanders have lived and developed their common life completely separated from the societies from which they were originally derived. Now it is an almost universal consequence of race mixture that the mixed bloods live in contact with the parental groups and in one or the other of the parental societies. This can, as we have seen, have profound consequences on the status and position of the mixed group. And since social status works both ways, affecting those within it by their own attitude as members of a special class and by the attitude of

1. The only parallel to Pitcairn known to me is Tristan da Cunha where a community of mixed Negro-Europeans have lived in isolation for well over 100 years.

others toward them, the association of a mixed group with one of its parental societies can be a decisive influence on its development. Where mixed bloods form a class suffering legal disability, economic injustice or social prejudice, they are victims of the attitudes, well or ill-founded, of the dominant element in their society. The extent to which these circumstances affect the behaviour and psychological traits of the members of such a class is difficult to appraise. And it is equally difficult to assess the degree to which these socially conditioned characteristics in turn reinforce the attitudes that encourage them. Many competent students are convinced that they are significant.

It is because of all this that the Pitcairn Islanders' complete separation from and independence of all other societies assume added importance, for here the entire community was of the same mixed origin, was free from any social structuring imposed upon it by a larger society and escaped the influences that prejudice subtly works upon its object. This, then, is a community where social prejudice, at least, is not a factor to be considered and where we can study the consequences of race mixture divorced from the concomitant effects that being a part of a larger group might impose.

On the other hand, in any consideration of the colony, its very isolation must be kept in mind, as it must be in appraising any small community remote from the world and cut off from the intellectual and material stimuli of a larger society. For the first 18 years of its existence, the Pitcairn colony remained unvisited by any ship. The children growing up in the first generation of the community had never seen anyone not a member of their little family, for the early colony lived as one extended family with John Adams, the surviving mutineer, as their *pater familias*. Even after 1808, when their existence became known, callers were rare and their visits very brief. Not until the 1820s did ships begin to call at Pitcairn to obtain water and fresh foods. As American whaling became increasingly active in the Pacific, these visits increased in number, reaching their highest frequency in the 1840s. With the decline of whaling, Pitcairn once more reverted to its former loneliness. These contacts, although important in bringing to the islanders the goods of the outside world for which they had acquired a taste, were brief and had little or no influence on the social structure of the colony.

It would, of course, be futile to attempt to rate Pitcairn against other communities, mixed or otherwise. There are

too many variables impossible to standardize that would have to be taken into account. But it is evident to anyone visiting the island that here is a well-organized settlement, conducting its own affairs successfully under a system devised by the islanders themselves. Like people anywhere, of course, they vary, but the visitor is invariably impressed by the pleasant, friendly manners of the islanders, their charm, their hospitality and self-confidence. There is no trace here of a people conscious of inferiority. They are all literate and have from the earliest days maintained a school system by their own efforts. Equally notable is the vigour of their Church. Previously adherents of the Church of England, they were converted to Seventh Day Adventism at the end of the last century. The way in which they made this shift in adherence is typical of their wisdom in managing their own affairs. In making the change, the community was faced with a situation that might have been serious in its consequences. The population was divided on the issue of conversion, and, recognizing the danger of a tiny community being split between two rival Churches, decided to put the matter to a vote, with the minority pledged to go along with the expressed wish of the majority. Thus the whole community unanimously adopted Seventh Day Adventism and preserved the religious unity of the colony.

Remarkable in so small a community, especially one cut off from the developments of the outside world, are some of the social institutions which were established on Pitcairn and maintained there ever since. A democratic rule developed early, with all men and women enjoying equal political rights, long before political rights were granted to women in the Western world and indeed before they were even very seriously discussed there. Education was, from the first, recognized as a necessity and, as the local institutions took form, all children were required to attend school until their sixteenth year. The various families on the island were taxed for the maintenance of the school. Teachers were selected from the students and supported by the revenue levied on the people. Here, too, the Pitcairn Islanders were in advance of educational developments in greater centres of civilization.

The culture that emerged on Pitcairn also reflected the mixed origin of the colony and in a rather striking way illustrates the decisive roles that sex and environment may play in creating a new society. The cultural resources available to the new colony were, of course, English and Tahitian. But it

is obvious on reflection that not all the content of either of these cultures could or would be drawn upon, since one culture, the English, was accessible only through men who were sailors by occupation, and the other, the Tahitian, was represented by women, who were familiar with the crafts and skills traditionally exercised in Tahiti by their sex. In addition to this, the colony on Pitcairn faced an unfamiliar environment and, in transplanting their traditional ways, both the Tahitian women and the English sailors found themselves without the usual technical equipment needed to practise whatever skills and arts they knew. Even such a basic and necessary object as a nail was not available, not to mention a variety of common tools that could not be fashioned on Pitcairn. Thus we find tapa cloth universally used by the colony in its early days. The making of this bark cloth is traditionally a woman's job in Tahiti and could be carried to Pitcairn intact. Similarly, cooking being a woman's concern, the Tahitian technique of an underground oven was standard on Pitcairn. House building, on the contrary, was the result of a complex of influences. The Tahitian style of house would have been unsuitable in the colder climate of Pitcairn, but in any event it probably could not have been built by the women, who in Tahiti leave the framing of a house to the men. The Englishmen, probably only as adept in carpentry as sailors of those days might be expected to be, were handicapped by the lack of essential building materials and of tools. We find them, as a consequence, building houses ingeniously put together, the frame mortised, the walls constructed of roughly hewn planks fitted into slotted uprights, the interiors provided with bunks as in a ship's cabin. The roof, however, was thatched in the Tahitian manner, since roof thatching is prepared in Tahiti by the women, and this was a contribution the Tahitian women on Pitcairn could make to this novel house.

A brief tabular history of the origin of some of the elements in the culture of Pitcairn before it was affected by the introduction of foreign goods is given on the opposite page.

One of the common allegations made about race mixture is that it produces inferior human beings. This belief is stated in various ways that all come to the same thing: mixed bloods combine the worst features of both parental groups, they are inferior to both stocks, or, at best, they are intermediate and therefore a debasement of the superior group. This kind of statement is put forth with respect to the psychological (intellectual), moral and biological characteristics of the hybrids.

For the most part, the evidence for this belief is strained through a subjective sieve and rarely takes account of the effect upon the hybrid of his social psychological and economic position in the society whose more favoured strains are compared with him. But more fundamental is the lack of reliable measures for many of the qualities in which the mixed blood is supposed to be deficient.

Origin of elements of culture on Pitcairn

	Tahitian	English	Original
The household arts:			
Underground oven	+		
Food preparation	+		
<i>Tapa</i> -making	+		
Use of calabash	+		
Dress style	+		
Hats	+		
Houses:			
Building materials		+	
Structure		+	+
Roof thatch	+		
Arrangement			+
Household equipment:			
Furniture		+	
'Linens'	+		
Lighting	+		
Fishing:			
Gear		+	
Methods	+	+	
Boats	+		+
Agriculture:			
Tools		+	
Methods	+	+	
Family life.			+
Social life:			
Social organization			+
Separation of sexes at meals	+		
Position of women			+
Dance	+		
Music	+	+	
Surf-riding	+		
Kite-flying	+	+	
Private ownership of land		+	
Common fund			+
Education		+	
Religion		+	+

As far as the Pitcairn Islanders are concerned, I can offer no objective data on their psychological or moral qualities. None, to my knowledge, is available. Certainly there have been many published impressions of these traits of the islanders and most of them are enthusiastic. How far the romantic aura that surrounds these people has seduced their visitors is beyond calculation. In the mid-nineteenth century the typical reaction was delight in finding so moral, upright and virtuous a colony sprung from mutineers, from violence and from murder. Nowadays, being less concerned with religious matters and having on the whole rather different values, the visitor is less impressed by these qualities and is likely to prize other aspects of their character. For my part, I can only report that, allowing for their isolation and for a consequent lack of sophistication, I found the Pitcairn Islanders an intelligent and attractive people. And I was struck by the number of men and women of impressive character possessed of the qualities that make for leadership.

Although biologically rather more of what might be called objective information is accessible, still it can only be used for comparative purposes with caution. Even such standard criteria as physical vigour, longevity or health cannot be properly used for such purposes without reference to diet, climate and various other environmental conditions. Both on Norfolk and Pitcairn Islands the physical condition of the islanders was excellent. In spite of the inbreeding, which has especially characterized Pitcairn, I found no physical deformities or obvious signs of degeneration. On Pitcairn, with a population of 200 (1936), there were no individuals incapable of taking care of themselves, nor any cases of serious mental deficiency. This is an excellent record compared with the frequency of such cases in Europe and the United States, especially in remote, inbred villages. In view of the fact that neither on Pitcairn nor Norfolk is there any resident medical service or even trained nursing aid, the longevity of the population is impressive. In 1924, out of a population of about 600 on Norfolk, there were 24 who were over 65 years of age, with the oldest reaching 95 years. On Pitcairn there were 12 between the ages of 65 and 86 in a population of 200.

There have been some claims that hybrids are smaller and weaker than their parents. Davenport and Steggerda on the basis of their study of race mixture in Jamaica believe their data demonstrated this conclusion. The Pitcairn and Norfolk evidence is quite the contrary. Indeed, there is evidence here

of hybrid vigour comparable to the vigour that can be demonstrated experimentally in a large number of animal and plant crosses. For example, if we take size as a measure of heightened physiological vigour, as is done for maize or cross-bred domestic animals, we find that the average stature of the parental groups is 171.4 cm. for Tahitian males and 170.6 cm. for the mutineers (based on British Admiralty records but possibly a little low since some of the sailors were not fully mature men). The modern Englishman averages around 172 cm. The F_1 , or first generation descendants, averaged 177.8 cm. (minimum 5 ft. 9½ in., maximum 6 ft. ¼ in.). This represents an average increase of over two inches, with the shortest male exceeding the average of his parental groups by a considerable margin. Although this striking increase has not been fully maintained in the present generation, it is still almost an inch above the parental average.

As another index of this vigour, the reproductive rate of the islanders is equally notable. I have already referred to the prodigiously rapid growth of the colony which has produced in 160-odd years well over 1,000 descendants. This may be appreciated from the birth rate by generations. The first generation averaged 7.44 children per mating, the second 9.10, the third 5.39. Since then there has been a further decline. The rate in the second generation is one of the highest on record for any community and reflects an unusual reproductive vigour.

As far as the evidence goes, then, the Pitcairn experiment lends no support for the thesis that race mixture merely leads to degeneration or at best produces a breed inferior to the superior parental race. In fact, we see in this colony some support for heightened vigour, for an extended variation and for a successful issue of the mingling of two diverse strains.

RACE CROSSING IN JAMAICA

Jamaica is one of the Greater Antilles in the West Indies. It is a rugged, even mountainous island, with an area of 11,000 sq. km. Discovered by Columbus in 1494, it became a part of the Spanish Empire and a seat of Spanish settlement. It remained in Spanish hands until 1655 when the British seized possession and expelled the Spaniards. The first Spanish settlers, mostly men, found an aboriginal population, the Arawak Indians, with whom they mixed freely. But the

Indians as a people did not long survive this contact. Enslavement and newly introduced diseases rapidly reduced their number until they finally became extinct. How much of these people has survived in their successors is not known. Negroes were introduced soon after white occupation began, since they were considered more adaptable to slavery. The Negro population grew rapidly and by the middle of the seventeenth century exceeded the number of whites on the island. The importation of fresh slaves, mostly from West Africa, continued up to 1847. Some Indian coolies were introduced in 1845 and 1868. In the 1920s the population was distributed as follows: Negroes, 660,420 (76.9 per cent); coloured, 157,223 (18.3); East Indian, 18,610 (2.2); whites, 14,476 (1.2); Chinese, 3,696 (0.4); not stated, 3,393 (0.4).

In 1929, Davenport and Steggerda published a study of race mixture in Jamaica, concerned mainly with the genetics of a cross between whites and Negroes and with an appraisal of the consequences of such hybridization. Since miscegenation between these two racial groups is numerically one of the major areas of race mixture and also happens to be a focus for much of the discussion on race mixture generally, this publication has a special interest. It also is one of the very few available investigations purporting to deal with the biology of Negro-white crosses.

Davenport set up his survey as an anthropometric and psychological examination of three groups of subjects: Negroes, descendants of the West African slaves introduced into Jamaica during the course of over three centuries, beginning shortly after the settlement of the island by the Spaniards; whites now resident on the island; and browns, the offspring of a mingling of these two racial stocks. Most of the browns apparently represent a long established class of half-castes and are not the produce of recent miscegenation. Davenport's general conclusions may be reduced to two areas of interest. One involves the existence of racial differences between the two parental stocks, particularly as they relate to physical and psychological characters. The other is more concerned with the quality of the hybrids (browns) compared with Negroes and whites. His opinion of the browns in this context is not high. He considers them inferior to both parental groups both biologically and intellectually. Moreover this inferiority is, in his interpretation, still further deepened by what he regards as evidence of the disharmony that occurs when incompatible traits from different races are combined in hybrid individuals.

Within its own field of research, *Race Crossing in Jamaica* is one of the most outspoken attacks on miscegenation, particularly between Negroes and whites. And, since it has been widely quoted, it demands careful examination.

A comparison of the physical traits of the browns reveals them much closer to the averages of the Negroes than to the whites. Indeed, in some instances the browns fall statistically below the means of both parental groups as, for example, in stature and weight. This prepotency of the Negro characteristics in the browns is considered as possible evidence of the genetic dominance of Negro traits over those of whites in such a cross, but Davenport correctly points out that it is more likely the consequence of repeated backcrossing with Negroes over a long period of time—that is, a much greater proportion of genes derived from its Negro than its white ancestry.

Aside from the inferiority of the browns in stature and weight, Davenport stresses their physical disharmony. The evidence of this seems to be primarily the relatively short arms of some of the browns, particularly in three women. Davenport can only be said to be making a mountain of a molehill here, since the relative proportions he finds so unusual are equalled in a number of whites and indeed some of the latter show an even more marked tendency in the same direction. In any event, it is difficult to see how any cogent theory of disharmony can be based on such flimsy evidence. The ridiculousness of the effort is made apparent when Davenport suggests that, because of their relatively short arms, the browns so endowed would have difficulty in picking things off the ground. By the same token the whites, who characteristically have shorter arms than Negroes, would be afflicted by the same disharmony and thus inferior to the Negroes.

A much more serious fault lies in the comparability of the data derived from the three groups under examination. Unless we can feel confident that each sample adequately represents its group and that they are drawn from approximately the same stations in life, the results of the comparison are, of course, suspect to the extent that they depart from such minimal standards. The description of the data given by the authors provides enough room for serious doubt on that score. For example, the age composition of the three groups is far from equivalent, but—what is more disturbing—the browns contain a relatively high proportion of males who are aged between 16 and 20. Males of 16, or slightly over, are still

far from having reached their mature physical development. Any comparison, therefore, with groups that are considerably older would be biased by this fact. The inferiority, therefore, of the browns in stature, weight and several other traits can easily be attributed to age alone. Parenthetically, however, I can see little reason for assigning inferiority or superiority to such differences in bodily dimensions or weight. Such thinking would lead us into a hierarchy of physical virtue based on stature or avoirdupois, whose obvious *reductio ad absurdum* needs no underlining. Another indication of non-comparability lies in the differences of socio-economic status between the three groups.

But perhaps as significant as any factor of non-comparability is the genetic relationship of the three groups to each other. This is a fundamental necessity for such an investigation that is never even discussed by the authors. There is, of course, no reason to suspect that the Negro population of the island is not the one to which the browns owe part of their ancestry. But there is much reason to doubt that the white group in the comparisons fully represents the population of whites that also contributed to the cross. This study sample is made up of individuals from Kingston whose families have long been settled in Jamaica. Another contingent consists of 20 farmers of German origin whose families have been settled in the interior of the island since the 1830s. The third and last comprises 19 Cayman Islanders who are of British stock but not residents of Jamaica and who are, in certain respects, quite distinct from the others in the sample. Now it is known that the Spaniards occupied Jamaica for about 150 years before the British took the island. The records make it clear that the Spanish population, at least in the beginning, was predominantly male and that they mixed extensively with the aboriginal Indians at first and, after their extinction as a group, with Negroes. How much the present day browns owe to these Spanish settlers, no one knows. None, at any rate, are included in Davenport's white sample. On the other hand, he does include a group of Germans who are said to have remained isolated throughout their residence in Jamaica. It is a very small settlement and could have contributed but very little to the brown mixture. Finally, the Cayman Islanders, although British and presumably similar in origin to the British who were settled on Jamaica, were actually not themselves involved in producing the browns. The differences between these various national groups of whites in their physical

characteristics are considerable and consequently a failure to compare the browns with the kind of whites from whom they are actually descended might lead to erroneous conclusions.

Thus far I have analysed the results of the comparisons of the physical traits. The psychological examinations, however, form an equally important part of the study. Twenty-six different tests were employed. Six of them formed a group designed by Seashore to test musical ability and another eight comprised the Army Alpha Test used in testing the United States Army during World War I. Davenport's general conclusions from these tests is that there are racial differences in psychological characters, that the Negroes surpass the whites in musical ability but are inferior in planning and judgement. The browns he considers to be inferior in their performance to both parental groups. In part, this low rating of the browns is the result of a crude comparison of the actual scores of the three groups and does not take into account the validity of the differences in score. When this is done, however, much of the inferiority of the browns disappears and they emerge roughly similar to the Negroes. This is more consonant with other investigations.

The racial difference, however, between Negroes and whites remains. It is a matter of controversy whether or not psychological differences between various races exist. It is, however, a subject fraught with difficulty because the methods of measuring innate intelligence or other psychological traits, apart from any influence by environment and conditioning, is far from solved. Professional psychologists have become increasingly aware that the test technique does not eliminate altogether the effects of such factors as education, language, culture, motivation and *rapport* with the tester, and that the validity of the sample must always be critically scrutinized. Premature conclusions, therefore, are not warranted, not only because the criteria of science demand careful and responsible investigation, but also because this subject happens to carry overtones of social and political implication that are of the utmost seriousness. Davenport, unfortunately, as I have already indicated, did not ensure the reliability of sampling demanded for such deductions. Nor did he consider the effect of any of the non-genetic variables that might have affected the scores. Furthermore, some of the tests he used are now regarded as peculiarly susceptible to such variables.

Although it would be rash indeed to deny altogether the possibility that psychological differences between races exist,

it is surely clear from the nature of the information we have that such differences would be of quite another order from those associated with physical race. In the latter sense we can distinguish well-defined races by their phenotypes or physical appearance. As I pointed out earlier, no one has any difficulty in recognizing the physical distinction between a north-west European and a west coast African. There is no overlap in the diagnostic differences between them. No west coast African of unmixed origin or of normal development has a skin colour anywhere approaching the pigmentation of the European. Conversely no north-west European except possibly for a few mutant individuals has hair like that characteristically encountered in Africa. These characters are technically phenotypic, but there is no doubt that their expression is largely if not wholly controlled by genetic factors. Thus far, all the psychological evidence, if we accept it as valid, presents a quite different picture. In this category of characters, the races are distinguished from each other not by discontinuous or non-overlapping traits but by different ranges or distributions which actually overlap each other to a very considerable extent. Thus, although Davenport can write that the Negroes do better than whites in the Seashore musical tests, this refers only to average scores. In fact, the figures themselves show that many of the whites did better than some Negroes. Conversely, in the tests in which the whites were on the average superior, some Negroes surpassed some whites. Thus if I described a man as having dark brown skin, short frizzy hair, thick lips, facial prognathism and a low broad nose, he could be identified correctly only as a Negro. But a similar list of psychological traits would give no certain clues to his origin whatever. It would become possible only if a large group were described in statistical terms and even then only by an expert in such matters. It is obvious from this that the broad, sweeping generalizations implicit in Davenport's study, associating as it does psychological and physical differences in race, tend to give the former the character of the latter and thus a quite erroneous impression.

HAWAII

Race mixture has had a field day in Hawaii. Polynesians, all kinds and degrees of Europeans and Americans, Puerto Ricans, Chinese, Japanese, Koreans, Filipinos, not to mention

smaller contingents of other populations, have met here and produced a bewildering array of hybrids. The extraordinary fact about all this—extraordinary in the light of conditions in many other areas of race mixture—is the relative absence here of friction, prejudice or social rejection. There is no colour bar in Hawaii and no legal disability based on race, although contact between the same races elsewhere has given rise to them. Why, one might ask, has Hawaii become the seat of such an amicable arrangement? The answer, it seems to me, lies in the history of the Hawaiian islands and in their relation to the imperialism of the Western world.

When Captain Cook discovered the islands in 1778, he found them populous and administered by a strong feudal-like system. He made no attempt to claim them for Britain: in fact he was murdered by the natives and his expedition withdrew. By the time Vancouver and subsequent expeditions reached Hawaii, the islands had become consolidated or were rapidly becoming so under the rule of Kamehameha I. Thus in the early nineteenth century, when European powers were seizing every scrap of unclaimed territory to which they had access, the Hawaiian islands were able to resist these manoeuvres, since they were governed by a strong monarchical government capable of maintaining its hegemony over the islands. There was no political vacuum inviting imperial expansion. Of course, the balance of power in the Pacific played a part in preserving Hawaiian independence, but where a strong centralized native government was lacking, as in the Society Islands, the Marquesas and in many other island archipelagos, these succumbed to French or British control.

When, therefore, Americans and Europeans began settling in the Hawaiian islands in the early years of the nineteenth century, drawn there by commerce, adventure or missionary enterprise, they were legally foreigners whose advancement and prosperity depended on the good will of the Hawaiians. To own and hold land in that feudal society required permission and special dispensation or possibly marriage with a daughter of a chief. To pursue missionary work with any hope of success, the Hawaiian chiefs and royal family had to be won over tactfully and their acquiescence sued for with the respect exacted by a ruling class. From the very beginning of this contact with the Western world, therefore, the Hawaiians were in the position of authority. Never having been conquered, they remained the masters. Their chiefs and kings continued to be persons endowed with power and entitled

to the respect and evidence of homage that their traditions demanded. Such a situation created a pattern of relationship to which the Americans and Europeans had to conform. And racial tolerance towards the Hawaiian had necessarily to become an accepted social and official pattern.

Since the potential and actual wealth of the islands—the land—remained in the hands of the native families, inter-marriage was frequently an economic advantage that brought a social position to the white man which he might not otherwise easily achieve. His children, therefore, would acquire status and prestige in the beginning not so much from their white ancestry as from the status and land they inherited from their native mothers. Enough of such marriages took place to entrench half-castes firmly in the upper social and economic levels of Hawaiian society. With the native race enjoying social and economic dominance, miscegenation with it could not lead to the social rejection of the half-caste, since to do so would also imply an intolerable rejection of the Hawaiian. Moreover, the half-caste had family connexions with a rising class of whites. Thus race mixture in Hawaii very early acquired an official acceptance and, publicly at least, led to no social segregation. This pattern was extremely important for the far more numerous offspring of mixed marriages on lower levels of Hawaiian society, as it fixed the terms of social tolerance under which they existed.

Later, when Chinese and Japanese labourers for the plantations began to be imported in large numbers, they entered a situation where, racially at least, official tolerance was the accepted mode. Social prejudice and economic resentment against these newcomers did develop and at times became quite acute, but it could not degenerate into a crude, open, racial form since that would have involved the Hawaiians and the part-Hawaiians. The pattern of racial tolerance had to be extended to include all the various races that were joining and mingling with the Hawaiian population.

When, in 1900, the Hawaiian Kingdom came to an end and the islands were annexed by mutual agreement to the United States, the tradition of racial tolerance, established for over a century, was firmly enough implanted in the Hawaiian way of life to withstand continental influences stemming from different attitudes. This, at any rate, was true up to World War II, before the large-scale migration of mainland population in connexion with wartime activities took place. Some hints have come through that the sudden increase of settlers

conditioned to another tradition has to some extent affected the situation described above, but these may merely be reflexions of difficulties of readjustment rather than indications of a fundamental change.

While the picture drawn here of conditions in Hawaii represents an unusually benign resolution of a complex racial situation, it should not be taken to imply that race or race mixture does not exist as a factor at all in Hawaiian life. That they do is obvious from any careful consideration of that life. It must be remembered, first of all, that the various racial groups that entered the islands as labour recruitments, came mainly in fairly considerable numbers. As such, they were settled on plantations where they naturally tended to form cultural isolates, separated from Hawaiian life by its unfamiliarity and by barriers of language. Moreover, their own tendency was to reproduce in this alien land the familiar elements of their own culture with all its values. Later, as the members of these labour groups were able to free themselves from plantation work and to establish themselves in such urban centres as Honolulu, they generally settled in tight residential sections where they could continue to enjoy the cultural security that close association with one's fellows gives. Thus some continuity of racial and cultural identity was maintained. For the most part it is a voluntary type of segregation which has, however, tended to break down to a large degree as acculturation and economic prosperity permitted. These racial and cultural entities serve, as long as they persist, to act as nuclei for their respective groups and to keep alive some of the traditions brought to the islands. While they continue to exist, they also keep alive a social centre that affects the contacts of their group and their marital patterns.

That some cohesion still exists along these lines is evident from the in-and-out marriage rates of these racial groups. It is a fairly general pattern that the immigrants tend to marry within their own group when partners are available. But, with continued residence in Hawaii, they all show an increasing inclination to marry outside the group. The rate with which this occurs varies from group to group and depends, apparently, on a number of factors too complicated to go into here. The out-marriages, however, are not random, but follow patterns distinct for each group. To some extent these out-marriages are reflexions of opportunity but also of a variety of cultural and possibly racial attitudes. The striking thing,

however, is that each group reveals a stronger inclination to marry half-caste Hawaiians than any others when they do marry outside their own circle. Thus the Chinese are more likely to marry mixed Chinese-Hawaiian, while the whites show an equally persistent trend towards Caucasian-Hawaiian mixed bloods in preference to any other group.

The mixed Hawaiians, thus, by a steady growth through primary crosses, by intermarriage with 'pure' racial groups and by their own high natural increase, are expanding at a more rapid rate than any other major contingent of the population. And although it is unlikely that all the groups will be dissolved into one racially mixed population in the very near future, the present trends suggest that the mixed bloods are destined to become one of, if not the, major element in Hawaii's population.

FINAL REMARKS

Although the ubiquity and growth of hybridization have suggested to some prophets a future world inhabited only by various degrees and kinds of racially mixed populations, this is an extreme interpretation that need not be endorsed to emphasize the significance of the process we have been considering. For the fact of the matter is that, right now, race mixture is an important phenomenon in certain portions of the earth and of great indirect significance even to countries where its physical results are in a sense of academic interest only. We can, for example, scarcely hope to understand the populations, of such countries as Mexico or Brazil, to name only two, without a knowledge of the history of the miscegenation that has produced them. Nor can we, even though seated in Europe, escape altogether the effects of race contacts and race mingling as they occur in such distant places as South Africa.

But to recognize the importance of race mixture in the modern world does not unfortunately provide us with the solutions to problems which it raises. These, though sharing certain genetic similarities, are infinitely varied and must be studied each in its specific context if we are to acquire the necessary background with which to deal with them. Thus the history of race mixture in Peru, for example, with its emphasis on cultural considerations, presents a vastly different situation and calls for a different treatment from the

problems created by miscegenation in East or South Africa, where the resulting tensions are tied up with race consciousness and a struggle for power.

Although we may acknowledge the subtly differing and multifarious forms that race mixture assumes in different parts of the world, we can still draw from them some generalizations of wide pertinence. One of the most commonly held beliefs, where race mixture is regarded with disapproval, is that it leads to an eventual deterioration of the population affected by it. Whether or not this represents a rationalization to justify established patterns of social, economic and political custom which race mixture might threaten is difficult to say. The strength of this conviction is, however, far from commensurate with the evidence of it. Studies of racially mixed groups have in some instances demonstrated quite the reverse, as we have already seen in the Pitcairn Islanders. Fisher's investigation of the Rehobother Bastards, a cross between South African Boers and Hottentots, found them to be a similarly healthy and exceptionally vigorous people. Even Davenport's claims to have discovered evidence of deterioration and disharmony among the Negro-white hybrids of Jamaica do not, on close inspection, carry conviction. There is, therefore, no reliable documentation that race mixture as a biological process is inevitably a deleterious one.

On the psychological side, the consequences of race mixture are rather more controversial. Although many broad and sweeping distinctions have been drawn between races, distinctions which are considered to have a profound bearing on the quality of mixed populations, the difficulties in measuring objectively the innate psychological characteristics of races are still far from solved, and many competent authorities consequently reject as unjustified the conclusion that races differ psychologically in a significant way. In any event, the differences, such as they are, with their burden of cultural conditioning, reflect not discontinuous racial distinctions but variations in distribution and range. Under these circumstances we find, even where such differences exist, that many individuals of the supposedly inferior race are equal if not superior to a large proportion of the summations. To take an average of a large and varied population and apply it indiscriminately to all its members is to falsify its meaning and to misrepresent the actual situation. In our tendency to generalize people into groups, populations or race, we run the risk of losing the individual in the statistical mean or average. The

range of intelligence in various races as expressed by the I.Q. is such that if the I.Q. is to be established as a criterion of suitable mating then one might argue that some race mixtures are eminently more defensible than numerous marriages within a race. In other words, it all depends who is crossing with whom.

Indeed, on theoretical grounds, one might maintain that hybridization, by producing a wider range of types, does in fact have certain very real biological merits. Although the available investigations on racially mixed groups are not unequivocal on this point, nevertheless experimental data on a wider variety of animals and plants lead us to anticipate that the same genetic phenomena found among them might be expected in the human species as well. If this be true, then recombinations of parental racial characters would yield new forms, some of which might prove exceptionally viable and vigorous. As Dobzhansky has pointed out, variety can be a distinct advantage to a population undergoing changes in its environment. For the larger the number of variants the greater the chances are that one among them will be better fitted to survive, and, thus, the population as well.

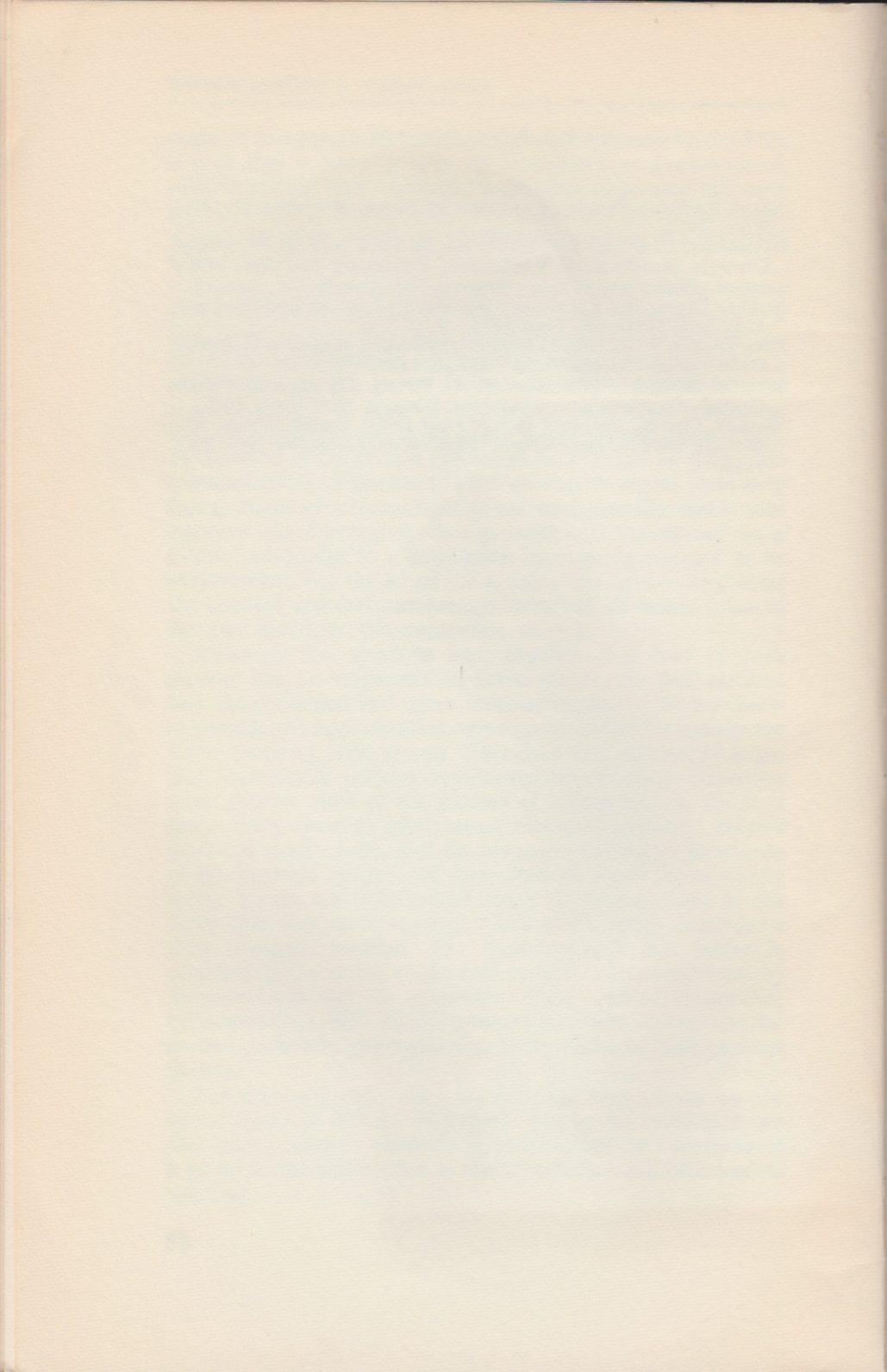
Although the emotions and impulses that lead to race mixture are no respecters of social status, the fact remains that the continued and more intimate contacts that are likely to provide the opportunities occur more frequently among the lower levels of both groups. This does not necessarily mean that biologically inferior representations of their respective races furnish most of the parents of mixed bloods, for it is not entirely clear to what extent biological selection follows on social stratification. But the economic and social inferiority of the parental groups can and often do place an especially heavy burden on their mixed progeny, which, added to the disabilities they suffer anyway as half-castes, tends to reinforce their marginal position. The importance of this factor in establishing the status of the half-caste is often overlooked by the casual observer. Its significance can be readily appreciated by comparison with mixed groups who have fortunately inherited economic and social dignity by virtue of their parents' position.

The great injustice, after all, that has been placed on the mixed-blood is that he is judged, not as an individual, an elementary right to which he is entitled, but as a member of a group about which there is much prejudice and little understanding.

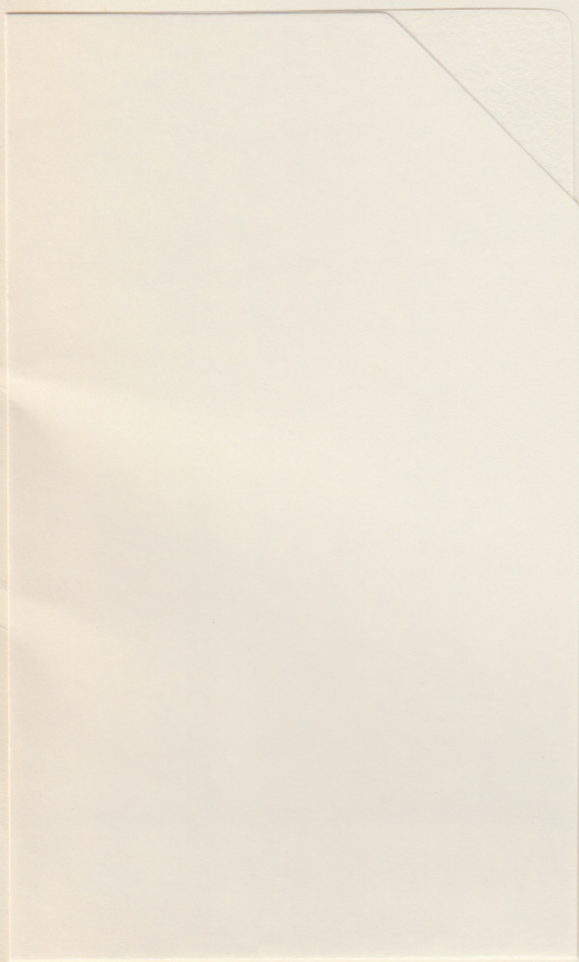
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